



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/128,718	08/04/1998	MICHAEL J. HELLER	236/092	3306
34263 7590 04/19/2007 O'MELVENY & MYERS LLP 610 NEWPORT CENTER DRIVE 17TH FLOOR NEWPORT BEACH, CA 92660			EXAMINER MORAN, MARJORIE A	
			ART UNIT	PAPER NUMBER
			1631	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

09/128,718

Applicant(s)

HELLER ET AL.

Examiner

Marjorie Moran

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2007.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 41-43 and 52-59 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 41, 43 and 52-59 is/are rejected.  
7) ☒ Claim(s) 41, 42 and 52-57 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/30/07.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

The amendment filed 1/30/07 has been entered. Claims 41-43 and 52-59 are pending. The terminal disclaimer filed on 1/30/07 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any of US Patents 5,605,662; 5,929,208 and 6,238,624 has been reviewed and is accepted. The terminal disclaimer has been recorded. The double patenting rejection of claims 42 and 43 is hereby withdrawn in view of the terminal disclaimer. The double patenting rejection of claim 41 is hereby withdrawn in view of the amendment filed 1/30/07.

#### ***Information Disclosure Statement***

The IDs filed 1/30/07 has been considered in full.

#### ***Claim Objections***

Claims 41, 42 and 52-57 objected to because of the following informalities: claim 41 recites "the specific A locations" in a step of reacting a monomer A; and "the specific B locations" in a step of reacting monomer B. There is no specific antecedent basis for these phrases; however, read in light of the specification and Figure 14, the locations are interpreted to be those which were deblocked in each respective previous step, therefore the claims are not indefinite. For better clarity, however, applicant is requested to amend the claims to recite "the deblocked A locations" and "the deblocked B locations," respectively.

The term “compliment” in line 1 of claim 42 should be --complement--.

The term “methods” in claim 52 should be --method--.

Claims 53 and 55 refer to the method of claim 41 for “electronically controlling” combinatorial synthesis. Claim 54 refers to the method of claim 41 for “electronically controlling the” combinatorial synthesis. Parent claim 41 is directed to an “electronic controlled” method, therefore claims 53-55 each improperly refer to the parent claim. It is noted that claim 52 properly refers to the method of parent claim 41.

Claims 56 and 57 refer to the method of claim 41 “for synthesizing a polymer;” however, parent claim 41 is directed to synthesis of a **biopolymer**. As claims 56 and 57 appear to be broader than the parent claim, they do not properly limit the parent claim, and are objected to.

To overcome the objections above, each dependent claim may simply recite “The method of claim 41 wherein...” For consistency, applicant is requested to use the same preamble format in each dependent claim, where appropriate.

Appropriate correction with regard to each objection above is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 55 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a LACK OF WRITTEN DESCRIPTION rejection.

A complex polymer, and how to combinatorially synthesize a complex polymer using the claimed method steps, are not fully and completely described by the instant specification and/or drawings.

The original claims did not recite complex polymers; however, page 39 of the originally filed specification does state that a similar process (to that described for synthesis of DNA) may be developed for peptides "and other complex polymers" therefore complex polymers are not new matter. However, the description does not otherwise describe or exemplify "complex polymers" such that one skilled in the art would be apprised of what these are, or would be aware that applicants were indeed in possession of methods of synthesizing complex polymers using an electronically addressable array, such as recited in the claimed method. Many types of polymers are known in the art which are referred to as "complex polymers" and each appears to "fit" a different definition of what a "complex polymer" IS. In some cases, any polymer which is not otherwise defined to be a polypeptide or oligonucleotide seems to be one which is a "complex polymer." In other cases, only polymers beyond a particular length are considered to be "complex;" in yet other cases. "complex" polymers are those

comprising different types of monomers as opposed to “simple” polymers which comprise multiples of the SAME monomer. As the instant specification does not define or otherwise describe a “complex” polymer such that one skilled in the art would have been apprised that applicant was indeed in possession of such, and/or was in possession of a method of synthesizing a “complex polymer,” the claims lack written description. It is noted that upon determination of a “complex polymer,” one skilled in the art would be able to determine what chemistry is required to form a polymer from monomers which are desired to be incorporated, therefore the claims are enabled by the general knowledge of those skilled in the art.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 41, 43 and 52-59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 41 recites a variety of limitation with regard to blocking and unblocking groups, which creates confusion. The claim recited a second step of disposing blocking groups on reaction locations, then recites contacting locations with deblocking groups under selectively charged conditions such that only selected sites are deblocked. These limitations are somewhat clear (see below regarding the interpretation of removing blocking/deblocking groups). Claim 41 then limits monomer A to comprise a

blocking group. the claim does not recite whether the blocking group attached to monomer A is the same or different from the blocking group disposed on reaction locations in the earlier step, but this merely renders the claim broad, not indefinite. It is noted that monomer A is reacted at "specific A locations," interpreted to be those locations which were "deblocked" (see above). Next, claim 41 recites another step of placing reaction locations in contact with a charged deblocking group. It is unclear whether the reaction locations contacted with the charged deblocking group are intended to be ALL reaction locations (including "specific A locations" or are intended to be only that subset which does NOT include "specific A locations" (i.e. only the originally blocked reaction locations). It is further unclear whether the deblocking group is intended to be specific to the original blocking groups only, to those blocking groups on A monomers only, or to all blocking groups.

Claim 41 then recites selecting biasing locations for which reaction B is to occur at the opposite charge of "the charged deblocking groups." It is unclear which charged deblocking groups are intended to be the antecedent for "the charged deblocking groups" recited in this step.

In the penultimate paragraph, claim 41 limits monomer B to comprise a blocking group. Again, the claim fails to recite whether this blocking group is the same or different from any previous blocking group. While this failure merely renders the claim broad, not indefinite, it does contribute to the same problem as that set forth above, as the final step of the claim recites repeating deblocking and blocking steps. For each "deblocking" step, it is unclear whether the reaction locations contacted with the

charged deblocking group are intended to be ALL reaction locations (including "specific N locations" or are intended to be only that subset which does NOT include "specific N locations" (i.e. only the originally blocked reaction locations). It is further unclear whether the deblocking group is intended to be specific to the original blocking groups only, to those blocking groups on an N monomer only, or to all blocking groups.

Applicant is advised that this rejection may be overcome by limiting all blocking groups to be the same, or may be overcome by limiting deblocking groups to be specific for particular blocking groups, or may be overcome by any other amendment which clarifies the relationship between blocking and deblocking agents. Applicant is reminded that any limitation(s) introduced by amendment must be supported by the originally filed description (specification, claims and/or drawings).

Claim 41 recites, in a step of selectively biasing, "whereby the deblocking group is removed from those locations at which reaction A is to occur" which is nonsensical. It is assumed that this is a typographical error and that applicant intended --whereby the **blocking** group is removed--, and the claim is so interpreted for purposes of further examination. However, as it is unclear if this is indeed what is intended by applicant, the claim is indefinite.

Claims 52-59 depend directly or indirectly from claim 41 and are therefore also indefinite for the reasons set forth above.

Claim 43 recites "The method for replicating patterned sequences of claim 42" in lines 1-2. However, amended claim 42 is not longer directed a method for replicating



patterned sequences, therefore there is no antecedent basis for the phrase, and claim 43 is indefinite.

Claim 55 limits a "biopolymer" to be a "complex polymer." While the specification provides literal support for a "complex polymer" it does not define what is intended by a "complex polymer" as set forth above. It is noted that a broad variety of compounds are exemplified as "complex compounds" in the prior art; some of these are organic polymers, but not necessarily those found or associated with biological organisms. It is unclear what is intended by applicant as a biopolymer which is a "complex polymer" therefore claim 55 is indefinite.

### ***Conclusion***

The claims are free of the prior art; however, no claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1631

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie Moran whose telephone number is 571-272-0720. The examiner can normally be reached on M-F 6:30 am- 2 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marjorie Moran  
Primary Examiner  
Art Unit 1631

*Marjorie A. Moran*  
4/15/07